

ANNUAL REPORT

OF THE

COMMITTEE

OF THE

MANCHESTER AND SALFORD

SANITARY ASSOCIATION,

BEING

A SUMMARY OF THEIR PROCEEDINGS FOR THE YEAR 1870.

—O—

MANCHESTER:

POWLSON AND SONS, PRINTERS, SOUTH KING STREET.

1871.



At the ANNUAL MEETING of the Manchester and Salford Sanitary Association, held at the Rooms, 33, Pall Mall, on Wednesday, May 24th, 1871:

THOMAS TURNER, Esq., F.R.C.S., IN THE CHAIR.

The Annual Report having been read ;

It was moved by Mr. LASCELLES ; seconded by Dr. MORGAN ;

That this Meeting cordially approving of the proceedings of the Committee, as set forth in their Report, request that the said Report may be printed and extensively circulated.

Moved by Dr. NOBLE ; seconded by Dr. RANSOME ;

That inasmuch as one of the fundamental objects of the Association is the prevention of disease, this Meeting trusts that the Committee will use every means in their power to secure all possible precautions being taken to prevent the spread of infectious disorders.

Moved by Dr. HARDIE ; seconded by Mr. F. GREG ;

That for the more speedy extinction of epidemic disease, and for the improvement of the condition of the dwellings of the poor, there is pressing need for the amendment and consolidation of the sanitary laws.

Moved by Dr. WILKINSON ; seconded by Mr. BRIBNER ;

That the best thanks of the Meeting be given to the President, Vice-Presidents, Committee, and Officers for the unwearied attention they have devoted to promoting the interests of this Association ; and that the following Noblemen and Gentlemen be requested to act for the ensuing year. (For the names see following page.)

T. TURNER, Chairman.

The Chair having been taken by Dr. NOBLE :

It was moved by Mr. MELLOR ; seconded by Mr. BOWRING ;

That the thanks of the Meeting be given to THOMAS TURNER, Esq., for presiding on this occasion and for the interest he always evinces in the welfare of the Association.

JOHN ROBERTS, M.D., } Hon.
C. H. KNIGHT, } Secs.

MANCHESTER AND SALFORD SANITARY ASSOCIATION.

Committee and Officers for the Year 1871.

President:

The Right Rev. The LORD BISHOP OF MANCHESTER.

Vice-Presidents:

The Worshipful the MAYOR of MANCHESTER.

The Worshipful the MAYOR of SALFORD.

The Very Rev. the DEAN of MANCHESTER.

MARQUIS of HARTINGTON.

Hon. ALGERNON EGERTON, M.P.

Sir E. ARMITAGE.

Sir JAS. BARDSLEY, M.D.

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Sir THOMAS BAZLEY, Bart., M.P.

JOHN CHEETHAM, Esq.

Sir W. FAIRBAIRN, Bart., F.R.S.

A. H. HEYWOOD, Esq.

Rev. Canon RICHSON, M.A.

Sir JOSEPH WHITWORTH, Bart.

Treasurer:

OLIVER HEYWOOD, Esq.

Chairman:

THOMAS TURNER, Esq., F.L.S., F.R.C.S.

Deputy-Chairman:

DANIEL NOBLE, M.A., M.D., F.R.C.P., Ardwick Green.

Committee:

HERBERT BIRLEY, Esq.

Mr. Alderman BOOTH.

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Dr. JAMES HARDIE.

WILLIAM HEATH, Esq.,
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Rev. JOHN HENN, B.A.,
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Rev. E. HEWLETT, M.A.

FRANCIS GREG, Esq.

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J. LASCELLES, Esq., B.A.

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THOMAS MELLOR, Esq.,
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Professor ROSCOE, B.A.,
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G. V. VERNON, Esq.,
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Mr. Councillor WILLIAMS.

Honorary Secretaries:

Dr. LEECH.

C. H. KNIGHT, Esq.

COTTAGE-DWELLINGS SUB-COMMITTEE :

A. J. BREMNER, Esq.
J. LASCELLES, Esq., B.A.
Dr. MORGAN.

Dr. A. RANSOME.
J. F. BOBERTS, Esq.
WM. ROYSTON.

Communications for the Committee may be addressed to—

THOMAS TURNER, Esq., Chairman,
77, Mosley Street.

Dr. NOBLE, Deputy Chairman,
Piccadilly.

OLIVER HEYWOOD, Esq., Treasurer,
St. Ann's Street.

The Honorary Secretaries, { Dr. LEECH, Stretford Road.
C. H. KNIGHT, Esq., 88, Mosley Street.

Or to

Mr. C. G. CARTLEDGE, Secretary,
At the Offices of the Association, 33, Pall Mall.
(Near to the Bank of England.)

REPORT.

IN the previous Report attention was drawn to the outbreak of Relapsing Fever in Manchester and Salford. Since then the Committee have watched with solicitude the course of this unusual epidemic, and being impressed with the importance of adopting more stringent measures against the spread of this and other infectious diseases, appointed Drs. Ransome and Hardie to draw up a memorial on the subject, to be presented to the Town Councils of Manchester and Salford, of which the following is a copy:—

TO THE WORSHIPFUL THE MAYORS, ALDERMEN, AND COUNCILLORS
OF MANCHESTER AND SALFORD.

GENTLEMEN,—The Committee of the Manchester and Salford Sanitary Association desire again to call the attention of the municipal authorities of Manchester and Salford to the dangers attending the spread of fevers and other infectious diseases, and to urge upon them the importance of providing more adequate hospital accommodation for these disorders, and of taking such other precautions as experience has shown to be attended by useful results. At various former periods the Association has pressed the subject on public notice. In October, 1865, a

memorial was presented to the Council of the city of Manchester, which pointed out the consequences of infection among the poorer classes, and recommended a thorough system of house to house visitation, the removal of all persons suffering from infectious diseases, when possible, to hospital, and the provision of extended hospital accommodation for such cases. In the year 1868, the Committee, at the suggestion of Mr. Leigh, the officer of health for Manchester, presented a requisition to the Mayor of that city to call a public meeting to discuss the subject. This meeting was held July 23, and a Committee of inquiry was appointed to investigate the present state of hospital accommodation for such cases. This Committee reported that the accommodation for fever cases among the independent poor was totally inadequate. Since then, however, nothing has been done to remedy the evil. Although, in the interval from that time to the present, the mortality from the spreading diseases has happily been moderate, we would still remind you that, in the two years 1869 and 1870, up to the date of the last return, 1,982 persons have fallen victims to fever of one form or another in Manchester and Salford; and that, in the immediately preceding year, 1868, alone, 2,429 lives were similarly sacrificed. It has been calculated, moreover, from a comparison of the total deaths with the sickness and mortality occurring in public practice, that, in 1868, 20,000 persons in Manchester and Salford were attacked by these disorders; and in the present year, although the nature of the epidemics has fortunately been of a milder character, the total number of seizures has been quite as large, and hence an almost equal amount of suffering and of loss has been borne by the community. From the prevalence of scarlatina in London, Liverpool, and elsewhere at the present time, it is also much to be feared that, before long, Manchester and Salford will again be the scene of a wide spread and fatal epidemic of this disease, entailing as usual, not simply the loss of so many lives, but an incalculable amount of misery and

grief among the population. In bringing this subject under your notice, the Association would represent that fevers hold a different position from some infectious complaints as regards their danger to the surrounding population, and that, in order to prevent their spread, the energetic action of the municipal authorities is necessary. The efficient working of any scheme directed towards this object would require the exercise of powers which no private institution possesses, but which may be employed by the city authorities and by their Medical Officer of Health. The chief measures which still need to be taken to prevent the spread of infection, and which we submit for your consideration are :—

1. An accurate and continued supervision of all parts of the city by duly qualified persons, who should attempt to discover all cases of infectious disease in their early stages.

2. The employment of compulsion, as far as the law will permit, to effect the removal of such cases to special wards, where they should be detained until the risk of infection is past.

3. The provision and maintenance of such wards by the public funds.

4. The provision of public mortuaries, in which fatal cases of infectious diseases might be deposited when necessary.

5. The establishment of a proper disinfective apparatus, when every facility should be given for its use by the general public.

6. The removal of families from infected dwellings until the latter had been thoroughly purified.

We would, in conclusion, express the hope that the council may see fit to take speedy and energetic action in the direction we have indicated.—Signed on behalf of the Manchester and Salford Sanitary Association,

THOS. TURNER, Chairman.

JOHN ROBERTS, M.D. Hon. Secretary.

The answer received from the Health Committee of Manchester may be regarded as satisfactory. Mr. Leigh concluded the letter in which he acknowledged, on behalf of the Health Committee, the receipt of the memorial, with the following words,—“that whilst the Committee concur generally in the recommendations of the memorial, they have for some time past had both the subject matter of the memorial and the recommendations contained in it under consideration.”

The reply from Salford was to the effect—“that the Borough was under systematic inspection, but no special wards being provided for infectious diseases, compulsion could only be used in the case of paupers; that the Committee were not prepared to recommend the erection and maintenance of public fever hospitals, considering that improved drainage and ash-pits called for more immediate attention; that the establishment of a public mortuary was under consideration, and disinfecting apparatus was being provided; that the Committee could not recommend the removal of families from infected dwellings; and they considered it desirable to await the Government bill for the consolidation of the Sanitary Acts before taking further steps.”

So much has been written and said of late years against vaccination, that a large and increasing number of people, especially among the lower classes, have ceased to regard it as a safe and efficient protection against Small-Pox. The Committee believing that no legislative enactment, however stringent, is

likely to obtain the vaccination of every child throughout the country without the co-operation of the parents, and further believing that that co-operation can only be obtained by the wide dissemination of information on the subject, requested Dr. Simpson to draw up a small pamphlet on Vaccination and Re-Vaccination, 5,000 copies of which have already been distributed in Manchester and Salford. A copy of this pamphlet will be found in the Appendix.

The health of Manchester and Salford during 1870, as shown by the disease and death returns of the Association, has not been so satisfactory as in the preceding year. If there had been no Statistics of Disease for these boroughs the state of the public health would have been set down as almost identical in the two years, for the deaths in 1870 only exceeded in number those for 1869 by 49, 12,812 being returned instead of 12,763. The mortality was low in these two as compared with that of preceding years, for, of the last seven, 1864 had the lowest mortality, next in order come 1869 and 1870, then follow, seriatim, 1867, 1866, 1865, and, lastly, 1868, which had the highest rate, the number of deaths exceeding those for 1864 by 2,192, and those for 1870 by 1,657.

The disease tables on the other hand indicate an unusual amount of sickness among the poorer classes during the last twelve months. The number of cases of disease treated in public practice during that period was greater than in any of the last five years, not excepting 1868, which was a very unhealthy year in these

districts. The number for 1870 amounted to 84,306, being 5,912 more than in 1869, and 296 more than in 1868.

The deaths in public practice during the year numbered 2,819. Since 1866 the number of deaths, in proportion to cases of disease, has decreased year by year; thus, in 1866, it was 1 to 23·5; in 1867, 1 to 24·89; in 1868, 1 to 25; in 1869, 1 to 26; and in 1870 it was 1 to 29·9 cases.

Zymotic diseases prevailed extensively during the year. When the total number of cases of Small-Pox, Measles, Scarlatina, Whooping-Cough, and Fever (treated in public practice), are added together they amount to 6,958. In the following table will be seen how many cases of these diseases were observed during the last five years respectively, and the number of deaths from them, as well as the total number of deaths from all causes in the eleven registration districts of Manchester and Salford. It appears that, although in 1870 there were more cases of these diseases observed in public practice than in any of the preceding four years, the register of deaths shows that the mortality from them was lower, which was no doubt owing to their exceptionally mild character.

	1866.	1867.	1868.	1869.	1870.
Cases of five zymotic diseases ...	6,310	5,557	6,934	5,077	6,958
Deaths from do. do.	2,164	1,996	3,048	1,987	1,507
Deaths from all causes	13,989	13,763	14,465	12,763	12,812

While Small-Pox has been on the increase in London, Liverpool, and other places, it is some satisfaction to find that the deaths from this cause in Manchester and Salford only exceeded the number for the preceding year by 6. The previous epidemic of this disease broke out suddenly, the number of deaths rising from 24 in 1862 to 166 in 1863, when it reached its height, and then subsided gradually. The present epidemic has not followed precisely the same course, though so far it has not deviated much from it. The number of deaths rose from 13 in 1868, to 70 in 1869, and reached 76 in 1870. The greatest number of deaths occurred in the first quarter, when 25 were returned; the number fell to 20 in the second, to 19 in the third, and to 12 in the last quarter,—the table of deaths indicating a steady decline in the disease. The disease returns under this head accord to a great extent with the returns of deaths. Five hundred and sixty-five cases of Small-Pox were observed during the year in public practice, being 75 more than in 1869. The greatest number occurred in the first quarter, the number decreased in the second and third quarters, but, contrary to the death return, rose considerably in the last three months of the year. The cases treated in public practice were very mild; out of 565 only 14 deaths occurred, being at the rate of 1 death in every 40 cases.

Measles declined to an unusual extent during the year. In 1869 it was very prevalent, 427 deaths having been caused by it, in 1870 the number fell to

72, the average number for each of the last ten years being 271. A similar decrease is also shown by the statistics of disease, though not quite to such an extent; 254 cases of Measles were treated in the public and charitable institutions of Manchester and Salford, being 529 less than in the preceding year. Seven of these 254 cases proved fatal, or 1 death in every 36 cases.

Scarlatina is another disease which did not prevail to the usual extent in 1870. There were 349 deaths from this cause registered in the eleven registration districts which supplied returns to the Sanitary Association; in the preceding year the number was 655, thus showing a diminution of 306 in favour of the present year. The disease declined in about the same proportion in public practice,—567 cases came under treatment, being 368 less than in 1869. The above figures show that the epidemic which commenced in 1866 and reached its height in 1868 has nearly subsided. The disease, as it appeared in public practice, was very mild, 1 death only occurring in every 35 cases.

Manchester and Salford have been comparatively free from Diphtheria during the last five years, the average annual number reported to the Sanitary Association having been 8. The number of cases for 1870 was 9, 2 of which proved fatal.

Whooping-Cough was very prevalent in the first three months of the year, the deaths caused by it being three times more numerous than those from any other zymotic disease. In the previous Report it was stated

that Whooping-Cough reached its height in the last quarter of 1869, when it caused 192 deaths in the eleven registration districts, such did not prove to be the case, the epidemic not reaching its height until the first quarter of this year when 326 deaths were registered, in the second they fell to 124, in the third to 28, and in the last quarter to 27, making altogether 505 from Whooping-Cough in 1870. This single disease destroyed as many lives during the year as all the forms of Fever taken together.

The disease returns show that there were 912 cases in public practice, being more than in any year since the annual tables of disease have been published; 619, or about two-thirds of the whole number occurred in the first three months. The rate of mortality was also higher than usual, 1 death having occurred in every 17.5 cases, the average annual death-rate for the last five years being 1 in 21.5.

There were 505 deaths from the various forms of Fever in 1870, being less than in any of the last six years. The register of deaths, however, gives a very erroneous idea of the prevalence of Fever, for, on turning to the tables of disease, it is seen that 4,660 cases were treated in the charitable and public institutions during the year, showing an increase of 2,401 upon the number for 1869. One thousand three hundred and fifty-four cases of Relapsing Fever are included in the total number for 1870. This fever had not been seen in Manchester previous to the autumn of 1869 since the epidemic of 1848, and

though it did not greatly increase the number of deaths, it caused almost one-third of the sickness under this heading. The returns show that 1,138 cases were observed in the Manchester Workhouse Hospital, 154 in the Greengate District in Salford, and 62 in the Chorlton Union Workhouse, which receives patients from Chorlton, Hulme, and Ardwick. Mr. Westmoreland, the late Resident Medical Officer at the Manchester Workhouse, who saw all the cases received there from the beginning of the epidemic to the end of 1870, states that the mortality was at the rate of 4·2 per cent., which would be about 56 deaths from Relapsing Fever in the twelve months. There were not so many deaths from Fever generally in public practice as in the preceding year, though the number of cases was more than double that for 1869, the proportion of deaths to cases being 1 in 10, in 1869, and 1 in 26 in 1870.

The mortality of Diarrhœa continues to be above the average of the last ten years. The deaths from this cause in 1870 amounted to 1,164, being 266 less than in 1868, and 605 more than in 1862. The average annual mortality for the three years 1862-64 was 674, while that of the six succeeding years has been 1,211. There was a larger number of cases of Diarrhœa and Dysentery treated in public practice than in the year 1869. Of the 3,667 cases observed 101 proved fatal. The proportion of deaths to cases was much the same in each of the last two years, being 1 in 38 in 1869, and 1 in 36 in 1870.

*Quarterly Return of Diseases in Public Practice during 1870,
compiled from the Weekly Returns.*

DISEASES.	1st Quarter.	2nd Quarter.	3rd Quarter	4th Quarter.	Total.
Small Pox	194	138	81	152	565
Measles	79	41	36	98	254
Scarlatina	125	138	151	153	567
Diphtheria	4	...	4	1	9
Whooping Cough..	619	193	59	41	912
Croup	1	3	8	4	16
Diarrhœa	365	502	2179	509	3555
Dysentary	19	19	48	26	112
Cholera.....	...	...	1	...	1
Erysipelas	88	77	85	137	387
Continued Fever...	530	467	910	1557	3464
Typhus	312	198	223	132	865
Typhoid	69	77	91	94	331
Febricula	476	413	543	580	2012
Ague.....	1	3	1	12	17
Rheumatic Fever..	280	243	194	198	915
Puerperal Fever...	4	4	2	3	13
Bronchitis	3911	2527	1794	3480	11712
Influenza	22	24	20	27	93
Pleurisy and Pneumonia ... }	264	219	194	242	919
Phthisis	1194	1201	1018	1218	4631
Constitnl. Syphilis	554	563	634	550	2301
Other diseases.....	9617	9560	8348	9850	37375
Accidents.....	3043	3151	3383	3703	13280
Total	21771	19761	20007	22767	84306

*Quarterly Return of Deaths in Manchester and Salford for 1870,
compiled from the Weekly Returns.*

DISEASES.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.
Small Pox	25	20	19	12	76
Measles.....	30	5	6	31	72
Whooping Cough..	326	124	28	27	505
Scarlatina.....	99	91	67	92	349
Diarrhœa	85	73	863	143	1164
Fever.....	105	121	125	154	505
Diseases of the Lungs	1273	863	544	974	3654
Other causes.....	1738	1581	1547	1621	6487
Total.....	3681	2878	3199	3054	12816

Sanitary Lectures have again been delivered in the various districts of Manchester and Salford. The Committee, however, regret that the funds at their disposal have not enabled them to make arrangements for the delivery of the same number as in preceding years ; they regret it the more as these lectures have been from the commencement very popular, and must have been productive of much good.

Last year attention was drawn to the financial difficulty in which the Association was placed, the balance sheet showing a deficit of £29 .12s. 11d. Since then that difficulty has been overcome through the kind assistance of an anonymous friend, who has forwarded to the Association a donation of £50, through Dr. Morgan. This timely aid will place the Committee in such a position as will leave them, after paying all outstanding claims, a balance in hand of £22 5s. 5d.

VACCINATION AND RE-VACCINATION.

VACCINATION.

THE Committee of the Manchester and Salford Sanitary Association wish to call attention to the importance of a thorough vaccination of the whole population.

The recent prevalence of Small-Pox in an epidemic form in Paris, London, and other places, where it has committed great ravages, renders it desirable to remind the public of the power it possesses, in vaccination, of checking and probably of stamping out a disease so justly dreaded.

From the general practice of vaccination in all civilized countries, it has come to pass that we know but little of the worst forms of Small-Pox; and, from this circumstance, in itself most fortunate, there has arisen some danger of its return amongst us in increased virulence.

Vaccination has rendered it for a long time past an infrequent disease, and has so modified it, when occurring, as to rob it of its terrors; a sense of security has thus been brought about, and the public has become careless and supine about an enemy so shorn of its powers.

But we need only refer to a few instances, illustrative of its effects when unmodified by vaccination, to show how dangerous a foe it would again become if not most carefully kept in check.

In Sweden, during the twenty-eight years preceding the introduction of vaccination, 2,050 persons out of each million of population died annually of Small-Pox. During forty years succeeding its introduction the annual deaths from Small-Pox, in each million of population, averaged 158.

In Berlin, for twenty-four years preceding the general use of vaccination, the Small-Pox death-rate had been 3,422. For forty years subsequently it has been only 176.

From such information as exists it seems probable, also, that the Small-Pox death-rate of London, within the bills of mortality, during the eighteenth century, ranged from 3,000 to 5,000. In 1854 it was only 149, in 1855 only 132.

These instances might be multiplied indefinitely. But a simple statement of the number of deaths gives little idea of the horrors of this fearful scourge. The disease is one of the most loathsome to which man is subject; and, although life may be spared in a little more than half the cases, the cost of recovery is generally frightful disfigurement, and often the loss of sight or hearing. Not unfrequently the patient is broken down in health and strength, and consumption and other diseases are apt to seize upon the injured constitution. The reality of this fearful picture of the disease is fully borne out by its history.

On the other hand there is reason to believe that by vaccination in infancy, if thoroughly well performed and successful, most people are protected from Small-Pox for life. Isolated cases of Small-Pox in vaccinated persons may still occur, but as is well known Small-Pox itself does not always prevent a second attack; hence it is not surprising that it should sometimes occur after vaccination. It is, however, usually rendered so mild as not to threaten death or disfigurement.

This statement assumes that vaccination has been thorough and efficient. It is well known, however, that it is often imperfect and inefficient. Parents are frequently unwilling to have the necessary number of vesicles produced, and vaccinators sometimes yield to the pressure put upon them, forgetting that there is good evidence for the necessity of *thorough* vaccination, and that they should not be content with a result which is inefficient as a protection.

Universal experience hitherto, however, has shown that vaccination robs the most fatal and acute disease known in this country of its malignity, and has reduced the mortality of Small-Pox, in previous epidemics, from 35 per cent., or even a higher rate, to less than 1 per cent.

It may be stated incidentally that the present epidemic is one of exceptional severity. Thus, of the unvaccinated patients admitted into the Small-Pox Hospital, 44 per cent., and of the vaccinated 9 per cent., have died. This mortality of the vaccinated is probably due to the "imperfect and slipshod style" of recent vaccination.

RE-VACCINATION.

Notwithstanding the protective power of vaccination in infancy, it is desirable that on approaching adult life re-vaccination should be performed, for the following reasons:—

1st.—Because the vaccination in infancy may not have been thoroughly efficient.

2nd.—Because in a certain number of cases vaccination, by lapse of time, may perhaps lose some of its protective power.

Re-vaccination, properly and successfully performed, is an almost complete protection against Small-Pox. The following instance is often cited to illustrate this fact, but is not the less strong on that account:—Re-vaccination is always performed on the nurses and servants who enter the service of the Small-Pox Hospital, and Mr. Marson, Resident Medical Officer, asserts that, during his thirty-four years residence there, he has never known one of them attacked, though they live in the constant presence of the disease, and come into close contact with the sick.

Again, for twenty years after the introduction of re-vaccination into the Prussian army, the annual deaths averaged 2, contrasted with 104 annual deaths from Small-Pox before re-vaccination was adopted; and, moreover, of the 40 fatal cases occurring in that period, only 4 of the number were of persons who it is said had been successfully re-vaccinated.

It is advisable, therefore, for all persons to be re-vaccinated on approaching adult life, and this should be done systematically

and not alone during the panic of a threatened epidemic, when the supply of lymph is barely sufficient for the demand.

It has been currently reported by ignorant and eccentric, or interested persons, and by some irregular practitioners seeking notoriety, that a foul and contagious disease is often communicated by vaccination. But this statement will not bear enquiry, for the alleged instances invariably break down when investigated. Many turn out to be cases of eruption on the skin, having no relation whatever to any infectious disease; others are cases of the outward manifestation of disease previously latent in the system, which is apt to break out about the third or fourth month after birth, the time at which vaccination is usually performed; and others again are cases in which disease born with the children is attributed to vaccination, as a blind, in order to screen the misconduct of parents.

It is safe to assert that vaccination, *properly performed*, does not communicate the disease in question.

As Mr. Simon says: "Indisputable certainties, which anyone can verify for himself, are—first, that year by year millions of vaccinations are performed in Europe, with scarcely a solitary accusation transpiring that any constitutional disease has been communicated by any of them; and, secondly, that physicians and surgeons who could not fail to see such cases in abundance, if such abundance were a reality, concur with absolute uniformity, hundreds of them together, in declaring they have never in all their experience seen even a single case of the kind."

With this testimony those probably will be content who believe in the general ability and honesty of the cultivators of medical science in all parts of the civilized world, rather than in the rash statements and hasty conclusions of ignorant people, who probably owe their lives to the immortal discovery of Jenner.

REPORT OF THE
Meteorology of Manchester and the District,
AS CONNECTED WITH DISEASE.

FOR some years past I have been able to make and obtain Meteorological Observations in the towns of Manchester, Salford, and the surrounding districts. These observations I have reduced and compared with each other, as well as with the disease and death rate of the town population, as obtained from the Weekly Reports of this Association. From this comparison nothing can be more clear than that certain zymotic diseases are powerfully affected by atmospheric changes. This has been frequently pointed out by those who have marked the progress of disease from this point of view. It will lie beyond the range of this report to go into minute details, and, therefore, I shall confine myself to a statement of a few general facts, shewing how and what diseases are obviously affected by changes of the state of the atmosphere.

I would first point out that, though the mean temperature of the air of the town differs but slightly from that of out-lying country districts; yet, the range between the highest day and lowest night temperature differs very considerably. The highest day temperature in the town is hardly ever so high as it is in the

country. This at once points out the clearness and purity of a country atmosphere over that of a town. On the other hand, the lowest night temperature of the air in the town is always considerably above what it is in the country; and, as a consequence, greatly wanting in freshness. The difference between this urban and suburban temperature has been as much as six degrees.

Diarrhœa, Dysentery, Bronchitis, Influenza, and Scarlatina, seem to be very much influenced by atmospheric changes. For instance, cases of Diarrhœa and Dysentery increase as much as 400 per cent., in the months of July and August, over the number of cases in January, February, and March. On the other hand, cases of Bronchitis and Influenza increased as much as 100 per cent. in the months of January, February, and March, over the number of cases in July and August. The number of cases of Scarlatina and Rheumatism seems largely to increase during extraordinary wet weather in the winter months. There is also every reason to believe that other diseases are more or less affected by the state of the atmosphere. Purely meteorological conditions cannot be prevented; but there can be no question that the ravages which such diseases make would be largely prevented if persons liable to them would take due care to protect themselves against those states of the atmosphere that affect their health.

THOS. MACKERETH, F.R.A.S., F.M.S.

THE FOLLOWING LECTURES HAVE BEEN DELIVERED
DURING THE YEAR:—

LECTURER.	SUBJECT.	PLACE.
T. TURNER, Esq., F.R.C.S.	<i>Human Life in its Physical and Sanitary Relations.</i>	Hulme Town Hall.
Ditto	<i>The Use and Abuse of Meat and Drink.</i>	Egerton Schools, (St. Bartholomew's,) Regent Rd.
Ditto	<i>The danger of excess.</i>	St. Peter's School, Collier-street, Greengate, Salford.
DR. VINCENT WHITGREAVE.	<i>Vaccination and other questions of the day.</i>	St. John's Hall, Ford-street, Salford.
DR. LEDWARD,	<i>What is a stimulant?</i>	St. Saviour's School, Higher York-street, Chrltn-on-M.
Ditto	<i>Ditto</i>	St. Michael's School, Miller-street.
Ditto	<i>Food, &c.</i>	Ditto
DR. ARTHUR E. DAVIES.	<i>Food.—Illustrated by Chemical Experiments.</i>	Christ Church School, Hope street, Salford.
Ditto	<i>Ditto</i>	St. Mary's School, Upper Moss Lane, Hulme.
Ditto	<i>Ditto</i>	Independent School, Osborne-street, Oldham Rd.
S. M. BRADLEY, Esq., F.R.C.S.	<i>Digestion, and how to keep it.</i>	St. Mark's School, Clowes-street, West Gorton.
Ditto	<i>The Skin.</i>	All Souls' School, Harding-street, Every-st., Ancoats.
DR. J. SHEPHERD FLETCHER.	<i>Robust Health—How to obtain it.</i>	Rusholme Road School, Chorlton-on-Medlock.
A. SOMERS, Esq., M.R.C.S.	<i>Moses and Mahomet the Founders of Sanitary Science.</i>	St. James's School, Ellor-street, Pendleton.
DR. SYSON, Officer of Health for Salford.	<i>How to prevent Disease.</i>	St. Matthias's School, Broughton Road, Salford.

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JANUARY 1ST, 1870, TO DECEMBER 31ST, 1870.

四

	£	s.	d.
To Subscriptions	202	1	6
„ Donation—A Friend, per Dr. Morgan	50	0	0
„ Sale of Cards and Tracts.....	1	1	5
	<hr/>		
	£253	2	11

ASSETS AND LIABILITIES.

January, 1871.		£	s.	d.
To Balance in Bank	.....	51	1	5
„ Subscriptions not collected December 31st, 1870	...	14	11	0
		<hr/>		
		£65	12	5

January, 1871.		£	s.	d.
By Secretary's Salary—One Quarter	.....	15	0	0
„ Rent	.....	10	10	0
„ Printing	.....	15	8	0
„ Petty Cash	.....	2	9	0
		<hr/>		
		43	7	0
„ Balance	.....	22	5	5
		<hr/>		
		£65	12	5

EXAMINED AND FOUND CORRECT :

WILLIAM BOOTH.
WILLIAM ROYSTON.

Members from Donations in former Years.

	£	s.	d.
Atherton Miss (1866)	50	0	0
A Friend, per Dr. Morgan, (December, 1870).....	50	0	0
A Friend, per T. Turner, Esq. (1866).....	10	0	0
Barber Robert, Esq.....	10	0	0
Bazley T. Sebastian, Esq., Little Grove, East Barnet, Herts	5	5	0
Binyon Miss (Clifton).....	5	0	0
Brooks Samuel, Esq.	5	0	0
Chadwick R., Esq.....	20	0	0
Callender W. R., Senr., Esq. ¹	5	0	0
Ditto ditto second donation (1867)	5	0	0
Coultate E., Esq.	5	0	0
Ellesmere The Earl of.....	5	0	0
Gardner Robert, Esq.	5	5	0
Gillibrand P., Esq.	5	0	0
Heywood E. S., Esq.	20	0	0
Heywood Oliver, Esq.	15	0	0
Houldsworth Henry, Esq.	10	0	0
Heywood James, Esq.....	5	5	0
Heywood Sir B., Bart.....	5	5	0
Heywood Arthur H., Esq.	5	0	0
Jones R. Jennings, Esq.	5	0	0
Jones W. C., Esq.....	5	0	0
Manchester, The late Lord Bishop of	10	0	0
Mackintosh Messrs. C., and Co.....	5	5	0
Potters and Norris, Messrs.....	5	5	0
Plant James, Esq.....	5	0	0
Spafford George, Esq.	5	5	0
Schunk, Souchay, and Co., Messrs.....	5	0	0
Taylor J. E., Esq.....	5	5	0
Todd and Coston, Messrs.	5	0	0
Turner J. Aspinall, Esq., M.P.	5	0	0
Watkin W. B., Esq.....	10	0	0
Wood W. Rayner, Esq.....	5	0	0

S U B S C R I P T I O N S.

	£	s.	d.
Atherton James, Esq., Bridgewater-place	2	2	0
Agnew Thomas, Esq., Fair Hope, Eccles	1	1	0
Atkinson and Gould, Messrs., 6, Mosley-street	1	1	0
Andrew Henry, Esq., 13, Bread-street, High-street.....	1	1	0
Alcock The Misses, Nelson-street, Chorlton-upon-Medlock...	0	10	6
Barbour Messrs. R., and Brother, Aytoun-street	2	2	0
Brooks William Cunliffe, Esq., the Bank, King-street.....	2	2	0
Behrens Messrs. S. L., and Co., 22, Oxford-street.....	2	2	0
Brown Messrs. J., Son, and Co., Portland-street	2	2	0
Butterworth and Brooks, Messrs., Charlotte-street	2	2	0
Bellhouse Messrs. J. and W., Minshull Mills, Old Garrett ...	2	2	0
Bannerman J. A., Esq., 33, York-street	1	1	0
Bardsley Sir James L., M.D., Chatham-street	1	1	0
Browne Dr. Henry, Clairville, Oxford-street	1	1	0
Brown William B., Esq., Leaf-square	1	1	0
Booth William, Esq., Oldham-street	1	1	0
Boutflower J., Esq., Bury New Road	1	1	0
Buokley Edmund, Esq., Ducie-street, Piccadilly	1	1	0
Bazley Sir Thomas, M.P.....	1	1	0
Behrens Jacob, Esq., 41, Portland-street	1	1	0
Beever, Darwell, and Taylor, Messrs., John Dalton-street...	1	1	0
Binyons, Robinson, and Co., Messrs., St. Ann's-square	1	1	0
Bradshaw and Co., Messrs. J., Artillery-street	1	1	0
Bank of England, King-street	1	1	0
Bright Messrs., and Co., 22, New Brown-street.....	1	1	0
Barker N., Esq., Rusholme.....	0	10	6
Bromiley Messrs., and Sons, 3, Cateaton-street.....	0	10	6
Bowman E., Esq., Victoria Park	0	10	6
Bolderson J., Junr., Esq., 86, Bury New Road	0	10	6
Booth Thomas, Esq., Salford.....	0	5	0

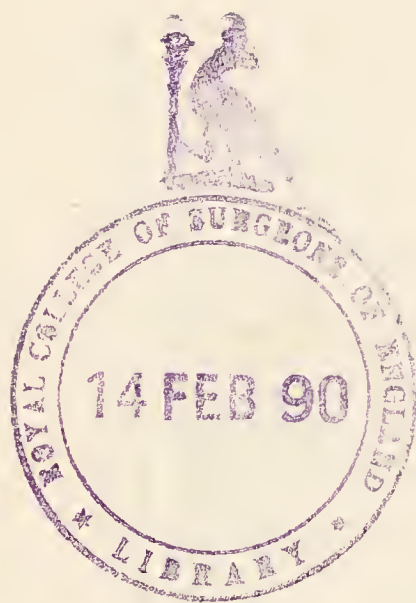
	£	s.	d.
Carlton Messrs. J., Walker, and Watson, 11, Mosley-street..	2	2	0
Curtis John, Esq., Portland-street	1	1	0
Coleshaw, Nicol, and Co., Portland-street	1	1	0
Cunliffe and Sons, Messrs., Bond-street, Nether-street, Tipping-street, Ardwick.....	1	1	0
Carver, Brothers, and Co., Messrs., 7, Lower Mosley-street	1	1	0
Crum Walter, Messrs., and Co., 76, Mosley-street	1	1	0
Calvert Dr. F. Crace, Bond-street	1	1	0
Chadwick David, Esq., 64, Cross-street	1	1	0
Charlewood H., Esq., 5, Clarence-street	1	1	0
Cooke Thomas, Esq., Oxford-street Twist Co.....	1	1	0
Collins Edward, Esq., Corn Mill, 35, Long Millgate	1	1	0
Cawley C. E., Esq., M.P., Carlton Buildings, Cooper-street..	1	1	0
Carver William, and Co., Messrs., 15, Mosley-street	1	0	0
Carlisle Brothers, Messrs., 1, St. Peter's-square	1	0	0
Corbett J., Esq., Cross-street.....	0	10	6
Chadwick John, Esq., 12A, Mosley-street	0	10	0
Dugdale Messrs. John, and Brothers, Booth-street	1	1	0
D'Hauregard Messrs. H., and Co., Little Lever-street.....	1	1	0
Fairbridge and Holliday, Messrs., 57, King-street	1	1	0
Findlater and Mackie, Messrs.	1	1	0
Fairbairn, Sir William, Kt., Polygon, Ardwick.....	1	1	0
Fryer, Benson, and Foster, Messrs., Chester-st., Oxford-st..	1	1	0
Fullarton John Alexander, Esq., 49, Major-street	1	1	0
Franklin J. A., Esq., Bury New Road.....	0	10	0
Gladstone Robert, Esq., 4, Half-moon-street.....	2	2	0
Greg, Brothers, and Co., Messrs., Booth-street.....	2	2	0
Galloway Messrs. W. and J., Chester-road, Hulme	2	2	0
Grafton F. W., Esq., 25, Portland-street	2	2	0
Graham Messrs. William, and Co., 86, Major-street	1	1	0
Galloway Messrs. J., and Co., 7, Mosley-street	1	1	0
Grover, J. B. K., Esq., 1, Elm-street, Water-street.....	1	1	0
Gaskell Rev. William, 46, Plymouth-grove	1	1	0
Gladstone Murray, Esq., Cross-street	1	1	0
Gibson Rev. Canon, Polygon, Ardwick	1	1	0
Greg Francis, Esq., Booth-street	1	1	0
Goldschmidt Philip, Esq., Albert-square	1	1	0

	£	s.	d.
Heywood Arthur H., Esq., the Bank	2	2	0
Heywood E. S., Esq., „	2	2	0
Heywood Oliver, Esq., „	2	2	0
Harter William, Esq., Cheapside, King-street	2	2	0
Hunter Thomas, Esq., Cheapside, King-street	2	2	0
Harrison G. Morley, Esq., 6, Piccadilly	0	10	6
Hadfield George, Esq., 24, Fountain-street	0	10	6
Ireland Messrs. Alexander, and Co., Pall Mall	1	1	0
Jackson Messrs. E. and J., Portland-street	1	1	0
James and Chabot, Messrs., Portland-street	1	1	0
Jackson J. W., Esq.....	1	0	0
Joule Dr. J. P., Broughton.....	0	10	0
Kershaw, Sidebottom, and Co., Messrs., Portland-street ...	2	2	0
Keighley J., Esq., York-street	1	1	0
Kessler William, Esq., 33, Dale-street	1	0	0
Langton Wm., Esq., M'chester and Salford Bank, Mosley-st.	2	2	0
Leissler John, Esq., Messrs. Du Fay and Co., Booth-street..	2	2	0
Lee Messrs. Daniel, and Co., Fountain-street	2	2	0
Langworthy, Brothers, and Co., Messrs., Greengate, Salford	1	1	0
Lyon, Lord, and Co., Messrs., David-street	1	1	0
Leigh John, Esq., Whalley-range.....	1	1	0
Lund Edward, Esq., St. John-street, Deansgate	1	1	0
Lamb James, Esq., John Dalton-street	1	0	0
M'Laren Messrs. James, and Nephew, 18, George-street ...	2	2	0
Mackintosh Messrs. Charles, and Co., Cambridge-street ...	2	2	0
Munn Messrs. John, and Co., 52, Fountain-street	2	2	0
M'Connel W., Esq., Henry-street, Ancoats	2	2	0
M'Connel J., Esq., Bent Hill, Prestwick.....	2	2	0
Makin Messrs. J., and Son, 17, Mosley-street	1	1	0
M'Naughton and Thom, Messrs., 80, Mosley-street.....	1	1	0
Mellor Thomas, Esq., 204, Clairville, Oxford-street.....	1	1	0
M'Clure Messrs. John, and Son, Bond-street.....	1	1	0
Mendel Sam, Esq., Portland-street	1	1	0
M'Niven Charles, Esq.....	1	1	0
Manchester, the Bishop of,.....	1	1	0

	£	s.	d.
M'Kerrow Rev. Dr., Stamford-road, Bowdon	0	10	6
Mayson J. S., Esq., Charlotte-street	0	10	0
Novelli and Co., Messrs., 60, George-street	2	2	0
Neild Alfred, Esq., George-street.....	1	1	0
Nicholls B., Esq., Eagley House, Stockport-road.....	1	1	0
Noble Dr., 103, Piccadilly	1	1	0
Newton John, Esq., Carlton Buildings	1	1	0
Ogden Henry, Esq., 126, Deansgate	0	10	6
Oxley Edwin, Esq., 43, Port-street	0	10	0
Peel Messrs. J. and G., Pollard-street, Ancoats.....	2	2	0
Philips Messrs. J. N., and Co., Church-street	2	2	0
Peel Messrs. John, and Co., 11, Peel-street, Duke-street ...	2	2	0
Philips Herbert, Esq., Church-street	1	1	0
Potter Messrs. Edmund, and Co., 10, Charlotte-street.....	1	1	0
Pearce Robinson, and Co., Bale-st., Lower Mosley-street....	1	1	0
Powlson and Sons, Messrs., 26, South King-street	1	1	0
Prescott C. J. F., Esq., Faulkner-street	1	1	0
Peatson Dr. J. C., Mount-street	1	1	0
Parlane James, Esq., Dickinson-street	1	0	0
Pearson Mr. Alderman, Bridgewater-place	0	10	6
Phillipi Edward, Esq., Hall-street, Oxford-street.....	0	10	0
Reiss, Brothers, Messrs., 104, Cross-street.....	2	2	0
Ross Malcolm, and Co., Messrs., Cromford-court.....	1	1	0
Ransome Dr. Arthur, Peel-terrace, Bowdon	1	1	0
Ross Edward, Esq., London-road Station	1	1	0
Richson Rev. Canon, 11, Shakespeare-street.....	1	1	0
Rylands and Son, Messrs., New High-street.....	1	1	0
Rickards F. P., Esq., 12, Police-street, King-street.....	1	1	0
Ree H. P., Esq., 27, Faulkner-street	1	1	0
Ross William, Esq., 9, Leaf-square, Pendleton	1	1	0
Ralli Brothers, Messrs., Peter-street	1	1	0
Rumney Robert, Esq., King-street	1	1	0
Ryder James, Esq., Fallowfield.....	1	1	0
Ryder T. D., Esq., M. A.....	1	1	0
Radford Thomas, Esq., M.D., Higher Broughton.....	1	1	0

	£	s.	d.
Roberts J. F., Esq., Portland-street.....	1	1	0
Rice J., Esq., Pall Mall	0	5	0
Sampson and Leppoc, Messrs. H. J., and Co., St. Peter's-sqr.	2	2	0
Schuster Miss, Weaste	2	2	0
Schuster Messrs. Leo, Brothers, & Co., 12, Sackville-street..	2	2	0
Sharp, Stewart, & Co., Messrs., Atlas Works, Oxford-street.	2	2	0
Slater W., Esq. (Slater and Heelis), Princess-street	2	2	0
Samelson Dr., 15, St. John-street, Deansgate	1	1	0
Schunck, Souchay, and Co., Messrs., Peter-street.....	1	1	0
Slagg Messrs. John, and Co., 12, Pall Mall	1	1	0
Smith G. Fereday, Esq., Crown-street, Hulme.....	1	1	0
Smith Dr. R. Angus, York-place, Rusholme	1	1	0
Satterfield Joshua, Esq., Alderley.....	1	1	0
Shaw John, Esq., Brewery, City-road	1	1	0
Stoehr Messrs. E., and Co., Deansgate	1	1	0
Stowell Rev. T. A., M.A.....	1	1	0
Schofield Thomas, Esq., Cornbrook	1	1	0
Standring John, Esq., 18, Fountain-street.....	1	0	0
Schwind Charles, Esq., Bowdon	1	0	0
Turner Thomas, Esq., 77, Mosley-street.....	2	2	0
Taylor, Garnett, and Co., Messrs., Cross-street.....	2	2	0
Tysoe Messrs. Charles, and Sons, New Cannon-street.....	2	2	0
The Strines Printing Co., George-street.....	2	2	0
Turner Wright, Esq., Brindle-heath, Pendleton	1	1	0
Thompson Joseph, Esq., Pin Mill, Ardwick	1	1	0
Trapp S. Clement, Esq., 88, Mosley-street	0	10	0
Vernon, Freemantle, and Co., Messrs., Piccadilly Mills	2	2	0
Westhead Messrs. J. P. and E., and Co., 49, Piccadilly	2	2	0
Whitworth Messrs. B., and Brother, Exchange-street	2	2	0
Wadkin and King, Messrs., 12, Chepstow-street	1	1	0
Weston S., Esq., 3, Mount-street, Cross-street	1	1	0
Warner Thomas, Esq., 9, Cross-street.....	1	1	0
Wilkinson Dr. M. A. E., Greenheys.....	1	1	0
Watts Sir James, Kt., Portland-street	1	1	0
Williams Messrs. L. and E., Upton-street, London-road.....	1	1	0
Worthington Thomas, Esq., King-street	1	1	0

	£	s.	d.
Whitehead Dr., 87, Mosley-street.....	1	1	0
Wells, Cook, and Potter, Messrs., 18 and 20, Mosley-street..	1	1	0
Waters Messrs. J. E., and Co., 31, Portland-street	1	1	0
Wood M. Bateson, Esq., 19, Princess-street	1	1	0
Woodhouse Rev. F. C., St. Mary's Rectory, Upper Moss-lane	1	1	0
Winterbottom A., Esq., 29, Mosley-street	1	0	0
Westmore Rev. H. H., 15, York-street, Cheetham	0	10	6
Williams Mr. Councillor, 1, Marlborough-square	0	10	6
Wilkinson T. R., Esq., Manchester and Salford Bank.....	0	10	6



MANCHESTER AND SALFORD

RETURN FROM PAUPER CHARITABLE AND PUBLIC

New Cases of Disease coming under

MANCHESTER.																
Area in Statute Acres	Manchester Township 1,645															
Population in 1861	,, ,, 185,050															
DISEASES.	POOR LAW DISTRICTS.							PUBLIC INSTITUTIONS.								
	St. Peter's	St. Andrew's	St. George's	Cathedral	St. Jude's	St. Michael's	Total of Districts	Workhouse	ROYAL INFIRMARY.					CHILDREN		City Gaol
	1	2	3	4	5	6		7	In-patients	Out-patients	District I.	District II.	District III.	St. Mary's Hospital	Clinical Hospital	
Small-pox	6	4	8	2	3	9	32	36	76	1	9	7	8	27	..	..
Measles	8	3	5	6	3	5	30	10	2	4	4	17	20	9	5	..
Scarlet Fever	4	7	11	11	6	4	43	4	20	..	4	18	20	22	59	..
Diphtheria .....	..	..	..	..	..	3	3	3	1	..	..	..	..	..	1	..
Whooping-cough	15	16	21	24	16	27	119	2	..	45	1	13	13	156	333	..
Croup .....	..	..	..	..	..	..	..	..	..	..	..	3	..	1	..	..
Diarrhoea.....	53	63	36	16	27	82	277	234	4	256	20	39	20	595	563	209
Dysentery	6	3	4	1	..	3	17	15	..	..	..	3	1	29	..	1
Malignant Cholera.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Erysipelas	11	2	5	4	2	9	33	102	10	38	17	26	19	16	1	12
Continued Fever	228	26	109	135	95	207	800	1227	51	..	14	18	30	20	4	1
Typhus .....	..	19	5	1	7	..	32	255	75	..	12	23	18	2	..	1
Enteric or Typhoid .....	..	..	..	..	1	..	1	69	24	..	6	6	5	9	28	4
Febricula	56	6	20	22	28	94	226	60	49	22	57	101	99	227	24	98
Ague	1	..	..	..	..	..	1	12	..	1	..	..	1	..	..	..
Rheumatic Fever	6	2	8	6	5	21	48	126	68	284	16	29	49	7	..	8
Puerperal Fever.....	..	..	..	..	..	..	..	5	..	..	..	..	1	..	..	..
Bronchitis and Catarrh.....	242	247	154	161	181	245	1230	684	33	2050	158	222	288	367	482	202
Influenza.....	..	..	..	..	..	1	1	8	..	5	..	1	..	..	..	20
Pleurisy and Pneumonia	24	7	5	6	19	19	80	192	24	14	21	30	30	30	54	44
Phthisis	12	30	18	24	15	62	161	436	28	1403	129	112	197	103	44	65
Constitutional Syphilis	14	2	3	28	3	15	65	696	6	605	15	17	16	37	51	133
All other Diseases	890	359	799	258	241	531	3078	3890	1222	5648	445	373	402	3345	3660	197
Accidents	58	20	15	21	9	70	193	477	995	5918	16	44	44	..	31	..
TOTAL	1634	816	1226	726	661	1407	6470	8543	2688	16294	944	1102	1281	5002	5346	995

Medical Officers to whom the Association

- (1) *Mr. R. M. Mann,*
- (2) *„ J. Broadbent,*
- (3) *„ Edward Meacham,*
- (4) *„ John Walsh,*

- (5) *Mr. Octavius Dean,*
- (6) *Dr. E. Manley,*
- (7) *Mr. J. Westmoreland,*
- (8) *„ J. P. Sleightholme,*

- (9) *Mr. H. O. Pilkington,*
- (10) *„ A. E. Sutcliffe,*
- (11) *„ S. Buckley,*
- (12) *„ H. Runcorn,*
- (13)

SANITARY ASSOCIATION.

INSTITUTIONS OF MANCHESTER AND ADJOINING DISTRICTS.

Treatment during the year 1870.

SALFORD.						HULME.			CHORLTON.		ARDWICK.		PENDLETON AND PENDLEBURY.			DEATHS.	
..... 1,329 477 646 ..		21,739	 2,650Area in Statute Acres
..... 70,967 68,209.....			..44,850..		..508..	 24,448Population in 1861.
POOR LAW DISTRICT.			PUBLIC INSTITUTIONS.			POOR LAW DISTRICTS.			Poor Law District	Dispensary	Poor Law District	Ardwick & Ancoats Dispensary	Chorlton Union Workhouse	Total.	DISEASES.		
Greengate	Regent Road	Regent Road No. 2.	Workhouse	Dispensary	Salford County Gaol.	St. George's	Medlock	St. Philip's									
16	17	18	19	20	21	22	23	24	25	26	27	28	29				
21	24	11	62	47	..	21	14	15	35	19	6	11	83	565	Small-pox	14	
..	..	..	1	108	..	4	3	1	4	23	4	2	3	254	Measles	7
21	4	1	6	137	..	20	11	16	20	114	3	7	17	567	Scarlatina	16	
..	..	..	1	..	..	..	..	..	..	..	..	..	..	9	Diphtheria	2
7	6	2	12	50	..	31	6	10	13	51	2	27	13	912	Whooping-cough	52	
..	..	..	..	3	..	1	..	..	3	3	..	2	..	16	Croup	3
63	68	65	3	278	201	47	31	25	55	209	15	50	228	3555	Diarrhoea ..	97	
9	2	1	..	5	..	4	..	9	8	2	1	4	1	112	Dysentery ..	4	
..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	Malignant Cholera .....	..
7	11	1	8	11	2	4	11	3	7	6	4	17	21	387	Erysipelas	13	
189	19	79	458	138	..	30	19	16	1	50	17	39	244	3464	Continued Fever	60	
7	53	6	..	52	..	28	5	3	90	76	..	9	118	865	Typhus	85	
19	9	3	..	81	1	13	..	6	23	5	11	5	3	331	Enteric or Typhoid	34	
18	22	33	12	231	13	40	48	76	86	320	6	63	81	2012	Febricula	3	
..	..	..	..	..	..	..	..	1	..	..	..	..	1	17	Ague .....	..
7	17	2	30	4	4	19	16	14	14	11	32	85	25	915	Rheumatic Fever.....	6	
1	..	1	..	..	..	..	1	..	..	..	..	4	..	13	Puerperal Fever	1
202	337	278	97	2122	166	124	146	126	281	997	111	333	676	11712	Bronchitis and Cattarrh..	346	
8	1	..	..	5	1	..	5	..	2	..	..	6	30	93	Influenza .....	..
9	23	7	10	172	17	25	4	10	4	8	4	34	73	919	Pleurisy and Pneumonia..	70	
61	52	46	56	666	9	58	39	16	68	407	24	162	289	4631	Phthisis	527	
4	30	7	2	306	56	10	11	30	71	..	6	36	91	2301	Constitutional Syphilis....	24	
581	601	682	740	5207	119	294	283	334	852	1224	337	1132	2723	37376	All other Diseases	1346	
36	87	31	1	3153	4	27	28	11	88	460	6	1510	120	13280	Accidents	109	
1270	1366	1256	1499	12777	593	800	681	722	1725	3985	589	3538	4840	84306	..... TOTAL	2819

is indebted for the annexed Returns.

(14) Mr. W. M. Maccall,	(20) Dr. A. Veitch,	(25) Mr. Joseph Foster,
(15) Dr. J. Ogden Fletcher,	(21) „ Braddon,	(26) „ John Porter,
(16) „ A. C. Clarke,	(22) Mr. S. Woodcock,	(27) „ J. V. L. Westmacott,
(17) „ T. M. Johnson,	(23) Dr. Alex. Wilson,	(28) „ R. P. O. Gorman,
(18) „ James Cran,	(24) Mr. H. M. Williamson,	(29) „ George Clements.





RETURN OF BIRTHS AND DEATHS

COMPILED BY

TOWNSHIP OF	POPULATION 1861.	<i>Deaths for the Years ending December</i>				
		1870	1869	1868	1867	1866
Manchester	185,410	6112	6228	6965	6632	6932
Salford	71,002	2453	2332	2703	2491	2548
Pendleton and Pendlebury. }	24,448	593	615	781	664	649
Chorlton	44,795	1072	1054	1109	1119	1085
Hulme and Moss Side	71,128	1908	1915	2143	2113	2108
Ardwick	21,746	678	617	764	744	667
TOTAL.....	418,529	12816	12761	14465	13763	13989

It has been thought advisable that the mortality return be remodelled; the deaths from the several causes, hitherto given separately, are now included in the general grouping. For more detailed information, reference can be made to the Weekly Returns. Moreover, the rate of death to population is omitted, as it is impossible to ascertain with anything like accuracy the variation of population from year to year. To assume that the rate of increase will be the same as it was during the ten years preceding the last census will certainly, in this locality, lead to error. An illustration in proof may be supplied by the fact that the increase of population in the township of Manchester at the census of 1851, from the previous

FOR THE YEARS 1866 TO 1870.

MR. WILLIAM ROYSTON.

<i>Births for the Years ending December</i>					POPULATION	TOWNSHIP
1870	1869	1868	1867	1866	1861	OF
7065	6837	7124	6907	6742	185,410	Manchester
3555	3539	3288	3222	3109	71,002	Salford
978	1035	1120	1080	989	24,448	{ Pendleton and Pendlebury.
1692	1693	1649	1634	1576	44,795	Chorlton
3280	3058	3276	3061	3032	71,128	Hulme and Moss Side
1156	1089	1174	1157	1114	21,746	Ardwick
17726	17251	17631	17061	16562	418,529	TOTAL

one of 1841, was about 15 per cent., but at the census of 1861 the population had decreased nearly 1 per cent.; and again, in Hulme, at the census of 1841, the increase from 1831 was about 200 per cent., and at that of 1851 it was about 100 per cent., but at that of 1861 the increase was only about 30 per cent. The plan of estimating a certain number of persons for each house built is also fallacious, as the density of population varies in towns considerably with the circumstances of the times. The method adopted in previous tables of adding the excess of births over deaths cannot yield accurate results, because it does not include the effects of emigration and immigration.

